

## REMARKS

Applicants have carefully reviewed the arguments presented in the Office Action and respectfully request reconsideration and allowance of the claims in view of the remarks presented below.

Claim 2 has been canceled. Claims 16 and 27 have been amended. Thus, claims 1 and 3-39 are pending in the application.

Claims 16 and 27 were amended to correct inadvertent typographical errors. No new matter was added.

Claims 1 and 3-39 were rejected under 35 U.S.C. 103(a) as being unpatentable over RO-102047 A. Applicant respectfully traverses these rejections.

Applicant is submitting concurrently herewith a Declaration by Anthony Richard Gaukroger and Stephen Anthony Morris under 37 C.F.R. § 1.132 setting forth reasons why those skilled in the art would not understand RO-102047A to render Applicant's claimed invention obvious, and that those reading RO-102047 A would understand that that document does not disclose to skilled artisans the use of 0% PVC in formulating a masterbatch.

The declarants point out that, based on the fact that all of the compositions discussed in the RO-102047A contain Ba-Cd stabilizers, which are required when PVC is included, one skilled in the art would know that the compositions all contain PVC. Such stabilizers would not be present if no PVC was included.

Moreover, the declarants point out that RO-102047 A discusses PVC manufacturing technology, which uses lower levels of shear mixing. Such low levels of shear mixing only apply to formulations containing some amount of PVC, and thus one skilled in the art, reading RO-102047 A would know that the reference was not disclosing formulations having no PVC. Further, RO-102047 A discloses using a high speed dry blend prior to compounding, an essential step in processing a compound containing PVC. This again informs a skilled person that RO-102047 A is only disclosing use of a PVC compound in a masterbatch, because such a step would not be needed for a formulation having 0% PVC.

The declarants also point out the advantages of the claimed invention, and describe why the claimed invention is an unexpected improvement over the prior art.

Applicant's claimed masterbatch would not be obvious to one skilled in the art reading RO-102047. Indeed, inclusion of PVC in a masterbatch is well known, as indicated by the page from "Plastic Additives" by Gachter/Muller, published by Hanser Press, and attached hereto as Appendix A. This publication, as well as the Brady and Berard references cited by the Examiner, show that one skilled in the art would not find it unusual to include PVC; rather, they would find it unusual to exclude PVC from a masterbatch. This is objective evidence of nonobviousness.

Further, the abstract of RO-102047 itself indicates that PVC is to be included, not excluded, from the masterbatch, stating: "The PVC is mixed in a fluidised bed mixer . . . [with other constituents]." Polyethylene stearine and esters are then added. Those skilled in the art understand that this provides better mixing and improved properties in the final material. However, that is not what is being claimed by Applicant, who has discovered the claimed method of making a masterbatch without PVC that provides the advantages described above without the process difficulties incurred by the methods usually used and known by those skilled in the art. For these reasons, Applicant respectfully submits that claims 1, 16, 18, 19, 20 and 31, and the claims dependent therefrom, are patentable and request that the rejections be withdrawn and that claims 1 and 3-39 be allowed.

## **CONCLUSION**

Applicants have carefully reviewed the arguments presented in the Office Action and respectfully request reconsideration of the claims in view of the remarks presented. In light of the above amendments and remarks, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Should the Examiner have any questions concerning the above amendments and arguments, or any suggestions for further amending the claims to obtain allowance, Applicants request that the Examiner contact Applicants' attorney, John Fitzgerald, at 310-242-2667.

The Commissioner is authorized to credit any overpayment or charge any additional fees in this matter to our Deposit Account No. 06-2425. A duplicate of this paper is enclosed.

Respectfully submitted,

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## 7.1 Fundamentals of the PVC compound

## 7.1.1 General remarks:

PVC is a very special type of thermoplastic. Its special character lies above all in the particularly pronounced thermal instability of the pure polymer, in its rheological behavior and the readiness with which it accepts high quantities of plasticizers and fillers. Therefore, a PVC compound ready for processing is always a mixture of various compounds, in which the pure polymer is not necessarily the chief constituent in quantitative terms. The expression "PVC compound" as used in this paper shall, unless otherwise stated, be the mixture of a single PVC polymer with its various additives. Compounds containing several PVC polymers are the exception.

Due to this special position PVC has always been regarded as a "custom-tailored" plastics material, and as such it anticipated a development which has meanwhile reached the entire field of synthetic resins and resin blends.

## 7.1.2 The historical development of high-polymeric processing aids for PVC

In terms of stabilization and thermoplastic processing, plasticized PVC was highly developed at a fairly early stage, and, since the forties at least, it has been regarded as a synthetic resin characterized by ease of processing. The development of safely manageable compounds of rigid PVC, on the other hand, took several decades. In Europe, the general shortage of raw materials, due to economic difficulties and the war, accounted for the fact that the Germans in particular tackled the processing problems of rigid PVC mainly from the equipment angle. As a result of these intense efforts, technically perfected processing machinery has been available for the last 25 years or so.